Table 1: Patient, tumour and treatment characteristics

	Total Group (n=2157)	Cohort <60 (n=575)	Cohort ≥60 (n=1582)
Age: Median (Range)	64.5 (37-84.9)	57.9 (47.8-59.9)	69.0 (60.5-84.9)
Initial PSA: Median (Range)	6.90 (0.4-73)	6.00 (1.5 – 73)	7.10 (0.4 – 63)
Risk Group:			
Low	1118 (51.8%)	341 (59.3%)	777 (49.1%)
Intermediate	804 (37.3%)	181 (31.5%)	623 (39.4%)
High	192 (8.9%)	43 (7.5%)	149 (9.4%)
Unknown	43 (2.0%)	10 (1.7%)	33 (2.1%)
D90: Median (Range)	140.5 (59.0-199.9)	140.63 (59.0-195.1)	140.25 (60.2-199.9)

Conclusions: In this unscreened European population of men with low risk prostate cancer, outcomes were better in the under the age of 60 cohort. Younger age should not be considered a contraindication for brachytherapy as opposed to surgery

PO-0735

SBRT is safe and effective in low- intermediate risk prostate cancer. Results of a phase II study

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Purpose/Objective: Stereotactic Body Radiation Therapy (SBRT) is emerging as a promising modality treatment in the management of genitourinary malignancies. The delivery of very high radiation doses in few fractions with a steep dose gradient may improve the therapeutic ratio in the treatment of prostate cancer. In this phase II study we tested the efficacy and the impact on toxicity of SBRT in patients with low or intermediate risk prostate cancer.
Materials and Methods: Patients with low or intermediate risk prostate cancer histologically confirmed were enrolled in this phase II study. The treatment schedule was 35 Gy in 5 fractions on alternate days, delivered with RapidArc in FFF modality. Toxicity was defined according to CT-CAE criteria v3.0 and classified as acute if occurring within 90 days from treatment and as late after 90 days. Patient-reported quality of life (QOL) relative to urinary, sexual and gastrointestinal symptoms was evaluated through EPIC questionnaires.
Results: Between January 2012 and March 2014 73 patients were enrolled (46 low risk, 27 intermediate risk). At a median follow up of 18 months (range 3-30 months) all patients experienced a complete biochemical response. Acute toxicity was mild; only 8 % of patients presented a rectal G2-toxicity, while a maximum G2-GU toxicity was recorded in 43% of patients, mainly represented by urgency, dysuria and stranguria. Regarding late toxicity, a G1 proctitis was recorded in 6% of patients and a G1-GU (urgency, cystitis) in 31%; only 1 event of G2 urinary toxicity was observed (transient urethral stenosis). No heavier adverse events occurred. EPIC questionnaires revealed a slight worsening in the urinary domains during treatment, with a return to baseline three months after treatment. No significant modifications in any of the other domains explored were reported.
Conclusions: Stereotactic Body Radiotherapy appears to be an effective therapeutic option in low and intermediate risk prostate cancer patients, associated with a good compliance and tolerance of the treatment modality, and a low profile of late toxicity.

PO-0736

Bladder and trigone surface doses are related to acute urinary toxicity in focally dose-escalated prostate IMRT

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Purpose/Objective: To determine the relationship between acute genitourinary (GU) toxicity and dose distributions of GU pelvic structures in patients who received focal dose-escalation IMRT for localized prostate cancer. To develop a methodology of assessing planned dose to the bladder trigone using dose surface maps (DSM).
Materials and Methods: 50 patients with intermediate/high risk localized prostate cancer underwent radiotherapy (RT) within a prospective study (DELINEATE, ISRCTN04483921) which involved image-guided IMRT of 74Gy/37# to the prostate and 82Gy/37# to the dominant intra-prostatic nodule. The whole bladder and catheterized urethra were prospectively delineated. A bladder trigone surrogate structure was retrospectively contoured as a triangle-shaped region between the transition of the urethra into the bladder wall caudally and the transition of the ureters in the bladder cranially. Axially, the posterior of the contour described the extent of the bladder trigone. The contour was expanded anteriorly from the bladder wall (Fig. 1 red contour). A copy of this structure was created and the contour enlarged anteriorly and laterally only (Fig. 1 green contour). DSM were generated for both structures using dosimetric analysis software, VODCA (MSS GmBH, Hagendorn, CH). A subtraction method was developed using MATLAB (Mathworks, Natwick, MA) to establish the dosimetric region of coincidence between the two DSMs, defining the bladder trigone surface (Fig. 1c). Cumulative dose surface histograms (DSH) were generated for bladder trigone (BT). In addition, whole bladder (WB) DSH and DVH for urethra were created in VODCA.

Acute toxicity was defined as up to 18 weeks from the start of RT and was assessed using the modified RTOG toxicity criteria weekly during RT and then at week 10, 12 and 18. The NCI CTCAE v4 scoring system was used pre-RT and at week 18. Patients were also asked to complete IPSS questionnaires at these times. Peak toxicity grade (G) was dichotomized: modified RTOG G0&1 (n=13) vs G2&3 (n=37) and NCI CTCAE v4 (G0 vs G1&2). The Mann Whitney U test was used to compare toxicity groups using a range of dosimetric descriptors for each GU pelvic structure. Data was analysed in SPSS, v22 (IBM SPSS, Armonk, NY).

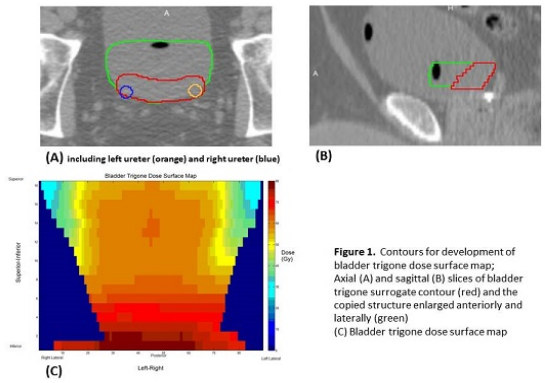

Figure 1. Contours for development of bladder trigone dose surface map; Axial (A) and sagittal (B) slices of bladder trigone surrogate contour (red) and the copied structure enlarged anteriorly and laterally (green)
(C) Bladder trigone dose surface map

Results: 36 patients (72%) experienced a peak G2 RTOG acute toxicity and 1 patient G3. At week 18, half of the patients had no toxicity according to the NCI CTCAE v4. IPSS median and IQR at pre-RT and 18 weeks (n=45) were 5 (4-9) and 7 (5-9) respectively.
There were statistically significant differences in a number of dose surface parameters for WB and BT using NCI CTCAE v4. No urethral dose parameters related to toxicity (Table 1). There were no statistically significant results for RTOG peak toxicity.

Dose level	30Gy	35Gy	40Gy	45Gy	50Gy	55Gy	60Gy	65Gy	70Gy	75Gy	80Gy	Max dose	Mean dose
Bladder DSH p values	0.10	0.06	0.02	0.02	0.02	0.02	0.04	0.05	0.05	0.01	0.01	0.03*	0.05
Bladder trigone DSH p values	0.10	0.07	0.02	0.07	0.03	0.01	0.04	0.24	0.36	0.51	0.39	0.43	0.045**
Urethra DVH p values	0.63	0.57	0.57	0.58	0.57	0.57	0.49	0.53	0.47	0.81	0.48	0.23	0.54

Table 1 Non-parametric comparison of dosimetric descriptors of whole bladder, bladder trigone and urethra between Grade 0 (n=25) vs. Grade 1 and 2 (n=25) NCI CTCAE v4.
* Mean whole bladder maximum dose (SD): 77.8 (2.2) Gy vs. 79.6 (2.8) Gy respectively
**Mean bladder trigone mean dose (SD): 55.9 (10.7) Gy vs. 61.5 (6.2) Gy respectively

Conclusions: Our technique to produce the dose surface map of the BT has enhanced the dosimetric information available for analysis of acute GU toxicity. The results suggest that modifying dose surface parameters to WB and BT may impact on the incidence of acute toxicity.

PO-0737

Adjuvant hormone therapy in intermediate-high risk prostate cancer: LH-RH agonist versus anti-androgens

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Purpose/Objective: Adjuvant hormonal therapy (AHT) improves the prognosis in intermediate-high risk prostate cancer treated with radiotherapy (RT). Luteinizing hormone-releasing hormone(LH -RH) agonist represent the standard AHT, although this treatment is associated with several adverse effect. An alternative treatment, not based on pharmacological castration, might be represented by high-dose antiandrogens (bicalutamide 150 mg / day). However, data comparing this treatments in terms of disease control are lacking. Therefore, aim of this study was to compare the results of two groups of patients who underwent AHT with LH- RH analogues or with bicalutamide, respectively.
Materials and Methods: We analyzed data from three different clinical trials in which patients received radiotherapy (RT) and AHT with LH- RH agonist or high doses bicalutamide. The therapeutic choice was based on the urologist and/or patient preferences. Biochemical recurrence-free survival (according to Phoenix criteria), local control, disease- free and overall survival were assessed using the Kaplan-Meier method. Survival curves were compared by log-rank test (univariate analysis) and Cox's Proportional Hazard Method (multivariate analysis , considering as covariates : stage , pretreatment Prostate Specific Antigen, Gleason Score, duration of AHT, RT doses delivered to the pelvic lymph nodes). Patients were classified according to the National Comprehensive Cancer Network 2014 risk.
Results: A total of 315 patients were included in the analysis. The 5 year results at univariate analysis are reported in the table.Multivariate analysis confirmed the lack of impact of type of AHT on biochemical recurrence -free survival *(p=* 0.758).
Conclusions:

Adjuvant hormone therapy	No. of patients	5- year survival			
		biochemical recurrence -free	Local recurrence free	Metastases free	Overall
LH-RH agonist	161	89,5	98,5	93,6	95,7
*Antiandrogen **	154	83,3	93,6	97,5	93.4
p :		0,965	0,642	0,670	0,447

*: bicalutamide 150 mg/day

The results of this study showed no significant differences in terms of biochemical and clinical outcomes among patients undergoing adjuvant AHT with LH -RH agonist or antiandrogen. Based on the lower toxicity profile of antiandrogens , further prospective studies comparing these two therapeutic alternatives appear justified.

PO-0738

Adjuvant conventionally fractionated 3D-CRT vs hypofractionated IMRTSIB: comparison of two prospectives studies

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